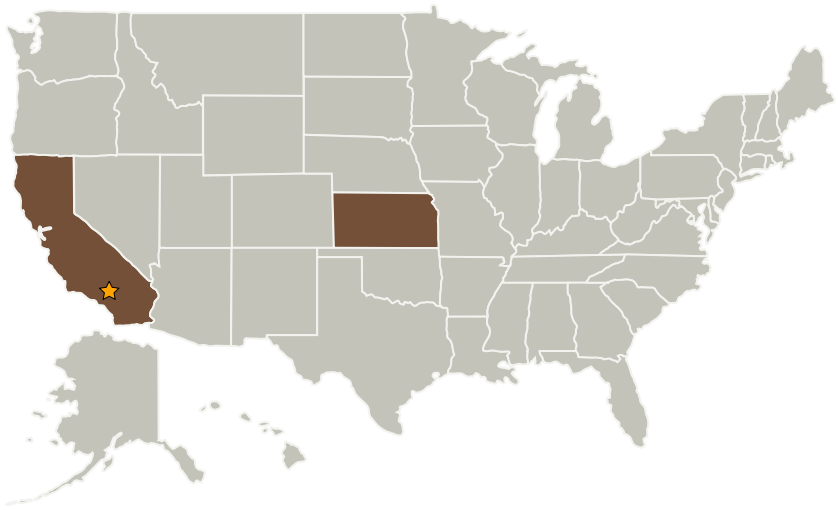
Aerodynamic Efficiency Enhancements for Air Vehicles, Phase II

Completed Technology Project (2006 - 2008)

Project Introduction

The need for aerodynamics-based efficiency enhancements for air vehicles is presented. The results of the Phase I investigation of concepts for morphing aircraft are discussed. Morphing enables the aircraft to optimize its configuration for various flight regimes. This translates to benefits in range, endurance, manueuvering and speed characteristics of the air vehicle. Using simulations, live testing, and benchtop hardware development, the feasibility of the concepts was established in Phase I. In Phase II, key additions to the design, such as trailing edge flaps, and an intelligent, sense-and-adapt method to achieve continuous aerodynamic optimization flight testing will be integrated. Wind tunnel testing and flight testing will be performed to refine and finalize the designs.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Armstrong Flight Research Center(AFRC)	Lead Organization	NASA Center	Edwards, California
Jacobs Engineering Group, Inc.	Supporting Organization	Industry	Dallas, Texas

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Armstrong Flight Research Center (AFRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations	
California	Kansas

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX15 Flight Vehicle Systems
  - TX15.1 Aerosciences
    - TX15.1.3 Aeroelasticity